

GROUNDWATER

Most information necessary for the EIR/EIS is contained in the report. However, additional quantification and specificity concerning location of vulnerable resources is recommended. As with most technical reports, the discussion is not focused enough and should be edited to remove information not specifically pertinent to CALFED. For the EIR/EIS, the authors should consider dividing the study area into hydrologically relevant areas within the CALFED footprint.

Groundwater "management" issues should be more clearly defined. With some editing (particularly focusing on removal of redundancy and marginal information), the body of the Impacts text is appropriate to form EIR/EIS impacts section. Mitigation recommendations need to be more closely tied to program impacts and checked for feasibility/secondary impacts.

Conformance to Outline

Groundwater

Affected Environment

- The summary (correctly) follows the organization of the body of the report.
- The description of each region is not broken down into historical perspective and current resource conditions as called for in the outline. An alternative format is used, breaking down the regions by topics such as hydrogeology, groundwater hydrology, groundwater quality, etc. The list of these subheadings differs from region to region, so comparison is made difficult. Although these topics may be important to the discussion of groundwater, the outline could accommodate these topic headings, particularly within the current (existing) conditions section.
- The SWP and CVP Service Area description includes subheadings for the Central Coast and Southern California Service areas of the SWP but not the North or South Bay Service areas, or CVP Service areas. No explanation is given for focusing on the two service areas.

Environmental Consequences

- The impacts report does not conform to the outline
- Chapter 1.0 is the summary, instead of the introduction
- The summary is not organized according to the organization of the body of the report. The heading topics do not correspond to those in the body of the report.
- Chapter 2.0 is the Introduction
- Chapter 3.0 is entitled "Approach to Evaluating and Reporting Ground Water Impacts" instead of "Assessment Methods". The section includes information not needed in the report, such as the study area description (although a description of the region of influence should be added to all of the reports), ground water outreach program, definitions, stakeholder concerns, principles for conjunctive use. The section should only include items pertaining to the assessment methodology used in the report.
- Significance criteria are included in Chapter 3.0 instead of in a separate chapter 4.0. A section on "Preliminary Mitigation Strategies" is included in Chapter 3. The outline does not specifically address mitigation strategies, except to include them in the example summary table, in a way that appears infeasible. However, mitigation measures should be discussed along with the impacts, in Chapter 5, and not in a separate chapter.
- Section 4.2 discusses impacts of CalFed Common Programs by region, instead of discussing the impacts of the common programs within each alternative as called for in the outline. This method of organizing the common program impacts seems preferable to that in the outline because it eliminates some repetition.

- As a result of pulling out the Common Programs, Impacts of Calfed Alternatives, Section 4.3, include only impacts of storage and conveyance options.
- No "Related Topics" are discussed, although this section could mention other reports that deal with subsidence (water quality, geomorphology), or with water quality issues (water quality), or with surface water and thus conjunctive use (surface water management, hydraulics and hydrodynamics).

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AFFECTED ENVIRONMENT

No.	Page/Para	Comment
1	General, level of detail	Most of the information needed to understand the impacts of the project is contained in the report. As with most of the technical reports, the discussion is not focused enough and could be edited down to remove information not pertaining to the Calfed footprint. This probably represents about 5 to 10 percent of the total 23 pages of text beginning with the Introduction in Section II. Editorial suggestions are presented on the attached hardcopy. The 5-page summary in Section I is not necessary to the technical report and does not have sufficient detail to stand alone in the PEIS. (It should probably be eliminated. This comment applies to all of the technical reports.)
2	General, completeness	The report is not detailed enough in some areas. This may be due in part to the lack of structure and focus in the impact analysis section (see general comments below). A little more quantification of ground water resources and more specificity concerning the location of vulnerable ground water resources are needed. For example, a map showing where the adjudicated basins are located, estimates of safe yields of subbasins, estimates of existing ground water withdrawals relative to safe yields, would help the reader understand project impacts in perspective. Some of this information may be hard to find, or may be speculative, and this should be noted. But without additional specificity it is difficult to judge the significance of project effects or the magnitude of the benefits.
3	4.1 Study Area	The division of the study area into Sacramento Valley, Delta, Bay, SJR Valley, and CVP-SWP Service areas should not preclude or override potential benefits of dividing the study area into other, more hydrologically relevant units. The reader should feel confident that the analysis is not constrained by artificial boundaries. If basin boundaries coincide with Calfed boundaries, this should be demonstrated, not assumed. Calfed footprint boundaries should be shown on maps that show basin boundaries. The maps should be simplified, and then same-scale maps used in the impacts section to illustrate the locations of impacts. The focus of the Affected Environment section should be on portions of the Calfed footprint where impacts occur. After identifying these focus areas ("region of influence" or ROI) in the impacts analysis, the affected environment section should be modified so that existing environment information is provided for the focus areas. The ROI need not be contiguous with the Calfed footprint, and may extend beyond the Calfed footprint. The boundaries of the Bay area are not clear. It should be defined by ground water basins and the boundaries of the basins shown on a political map. The boundary of the CVP-SWP Service area needs to be defined.
4	4.2 Regulatory Context	This section and Section 4.3 need to be more focused so that the distinction between them is clear. The term or concept of ground water "management" is very broad and needs to be defined. The regulatory context section currently is divided into a part addressing ground water resource allocation (Section 4.2.1) and a part addressing ground water quality (Section 4.2.2), but this

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		organizational division is not explicitly called out. The focus on regulatory context should be statutes and regulations and the agencies that implement them. This might be a good place to mention federal-state-local interaction, including Calfed.
5	4.2.1 Groundwater Management	This section seems to be about allocation of ground water resources. The statement that California does not have a statewide program for the management of groundwater seems unnecessarily controversial. A more positive statement should be substituted that describes what California does have. Management is a nebulous term and should be used carefully. Identify basis federal and state statutes and agencies (EPA, Bureau of Reclamation, DWR, SWRCB, RWQCBs; Safe Drinking Water Act, Porter Cologne, CVPIA, Water Code, Calfed Framework Agreement, etc., if they have a ground water connection). Keep in mind that this section might be pulled entirely into a regulatory context section of the PEIS, and should give the reader an idea of what the regulatory motivators and constraints are.
6	4.2.2 Groundwater Protection	This section seems to be about laws and agencies that protect ground water quality. The role of Dept of Pesticide Regulation, DTSC, and OEHHA relative to ground water protection is not explained and seems tangential. List the main players and include federal agencies. Mention local agency role in ground water protection, too.
7	4.3 Groundwater Management Programs and Definitions	Define "Management". Terms should go into a glossary. Start section at text under 4.3.3. Limit discussion to current "management" programs and explain up front why this discussion is relevant. Most of the discussion focuses on conjunctive use. Therefore, rather than list examples of projects it might be sufficient to describe the major features of conjunctive use projects and the amount of water under management.
		Due to time constraints, no further review of Affected Environment report was done.

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ENVIRONMENTAL IMPACTS/ CONSEQUENCES

No.	Page/Para	Comment
1	General, level of detail	<p>Section I, Summary contains appropriate detail for an executive summary, and could be transferred nearly whole to the Executive Summary of the PEIS.</p> <p>With some editing to remove unnecessary text, figures, and tables, the body of the report is at an appropriate level of detail for inclusion in the PEIS. The level of detail presented in the body of the report does not really justify a separate technical report.</p> <p>The Summary section contains the summary impacts table, which should be revised to a standard format (to be determined by Calfed). (The summary table could also be placed in the body of the report, for example after Section 3.2). The impacts in the summary table should be stated in the same (but abbreviated) terms used in the text so that it is easy to compare the table against the text. The statement of each impact should be the focus of a block of text. Impact-specific mitigation measures should be identified and clearly connected with the impact.</p>
2	General, completeness	<p>The existing figures belong in Affected Environment, not impacts section. Figures should be developed to illustrate locations, size, and direction of effects (for example, the location of high TDS & boron groundwater relative to the pumping center under metropolitan Sacramento).</p> <p>More quantitative and location-specific analysis is needed in the impacts discussion, both to put the magnitude of the impacts into perspective, and to identify the size and location of the affected regions</p>
3	1.1 Summary of Groundwater Outreach Program	This discussion is interesting but not essential. Could be included up front in the PEIS as part of Project Description. The report should focus on project impacts on groundwater, not Calfed policy or initiatives, unless they are mitigation measures.
4	1.2 Summary of Preliminary Mitigation Strategies	<p>This section comes before impacts have been introduced, (except in the Summary section), and seems premature. This is an organization issue to be addressed by Calfed.</p> <p>Cessation of the project is not a mitigation measure.</p>
5	3.2 Study Area	The study area discussion should define areas where groundwater projects will occur, if possible. The Study area should introduce the concept of the Region of Influence of project impacts. The ROI should not necessarily be the entire Calfed footprint. However, if specific sites are not defined, then criteria for identifying the region of influence of a project should be discussed. For example, it might not extend beyond the ground water basin in which the project is located.
6	3.3	This section is not essential and should be shortened or eliminated.

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	Groundwater Outreach Program	
7	3.3.1 Definitions	This section should be placed in a glossary.
8	3.3.2 Summary of Stakeholder Concerns	The stakeholder concerns should be presented as potential impacts later in the report. This section should be eliminated.
9	3.3.3 Draft Principles for Conjunctive Use	Conjunctive use should be discussed as an element of the project description. It is one of the elements that could result in benefits or adverse impacts, like surface storage. There is no reason to call it out specifically or give it greater priority relative to other project elements.
10	3.4 Significance Criteria	The statement of significance criteria could be shortened. It seems to come down to occurrence of long-term (permanent water level declines or water quality degradation. Declines can also lead to subsidence, but at the programmatic level and with the information presented in the affected environment, there is no need to distinguish between declines that would produce subsidence and declines that would produce third party effects. It would be useful to identify some of the third party effects. Referring to Section 3.3.2, the list of stakeholder concerns should probably be included in the list of significance criteria, unless these concerns are unjustified.
11	3.5 Preliminary Mitigation Strategies	Organizationally, this section would make more sense if it followed the discussion of impacts. One of the mitigation measures seems to imply that some subsidence could occur because the threshold level of ground water decline for subsidence cannot be predicted without observing subsidence. However, one of the stakeholder issues is zero tolerance for subsidence. This conflict should be addressed.
12	4.1 No Action Alternative Groundwater Conditions	The role of DWRSIM modeling in evaluating groundwater effects seems tenuous. The idea is that groundwater recharge would be affected by changes in head in stream channels. This is technically too complex to evaluate and not justified by the level of impact. It begs the question of why direct groundwater modeling is not included. Recommend that discussion of DWRSIM be deleted.
13	4.1.1 through 4.1.5	Impacts should be highlighted, possibly numbered. Same set of impacts should be followed through each region in same order to aid reader in identifying cross-regional continuity and consistency. Clear statement of the impact should start each impact text block, followed by brief description and a statement of the size or significance of the impact relative to the significance criteria. These impact statements should be summarized in the summary impacts table. The impacts should be followed by corresponding mitigation measures. More quantification of the range of the impacts is needed to put the impacts into perspective.
14	4.2 Impacts of Calfed Common Programs	Ground water impacts only occur from the Water Quality program and the Water Use Efficiency Program. As with the No Action Alternative, there should be a concise statement of the impact, its significance, and any mitigations necessary. Just the minimum text necessary to describe the nature of the impact is needed. No discussion of common programs or common program elements that do not have ground water impacts is needed, except to

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		state that there would be no impacts. As an example, the impacts of the water quality program on the Delta appear to be negligible. This should be stated in one or two sentences, with a brief explanation. The Water Use Efficiency Program appears to have four impacts in the Delta. They should be stated separately, in separate paragraphs, followed by mitigation measures. The same list of impacts should be followed through the other regions. Remove all of the tables (IV-1 through IV-6).
15	4.3 Impacts of Calfed Alternatives	This is the meat of the report. The impacts are reducible to a small set, each of which occurs because of storage (only groundwater storage impacts are addressed, but it seems likely that seepage from surface storage would also impact ground water. However, impacts of surface storage will be described in a separate technical report, so there is no need to address this issue in the technical report in detail, except to identify it as a potential impact at all surface storage sites). A lot of repetitive text could be avoided if the impacts of a given storage component were discussed once, and then a statement was made to the effect that each of the following alternatives contains this storage component. To the extent that the impacts might differ regionally, this should also be described. However, unless there are other impacts of the alternatives on ground water, there is no need to list the same impacts repetitively for each region and sub-alternative.